Technical Details for Projects Under the Broadband Initiatives Program

USDA Rural Development

BIP Application Technical Details

This presentation will focus on the following areas of the BIP Application:

- **System Design**
- **Network Diagram**
- **Detailed Budget Worksheet**
- **Service Level Objectives**
- **Licenses and Agreements**
- **Environmental Questionnaire**

System Design

The System Design is a detailed description of the proposed system. It should include:

- **A description of the proposed technology and how it will be deployed to provide service at the level required by the NOFA or any higher level which will be used for scoring. Specifically describe any design you have done related to system architecture. Examples:**
  - **Path link budgets and path loss models for a wireless system**
  - **How "nodes" are configured within a wireline system.**
  - **Copper loop lengths for DSL and the particular variety of DSL that will be deployed.**
- **A description of how traffic will flow from the Internet through the system to the end user.**
  - **Mention any interconnection points (any type of service; voice, video, or data) as specifically as possible including physical location, provider, type of connection, etc. Where the provider is known and agreements are already in hand, mention that and include the agreements under that section of the application. This overview will be augmented by the Network Diagram.**

System Design Con't

- **If the applicant is an existing provider, provide a description of the existing system and how it will integrate with the proposed system.**
- **Traffic modeling and oversubscription rates: is the system as designed adequate to support the forecasted customer load?**
- **A description of any contractor/vendor relationships that will be required to buildout and/or maintain the network. Where such a relationship already exists, mention it and include any applicable agreement in the "Licenses and Agreements" section.**

Network Diagram

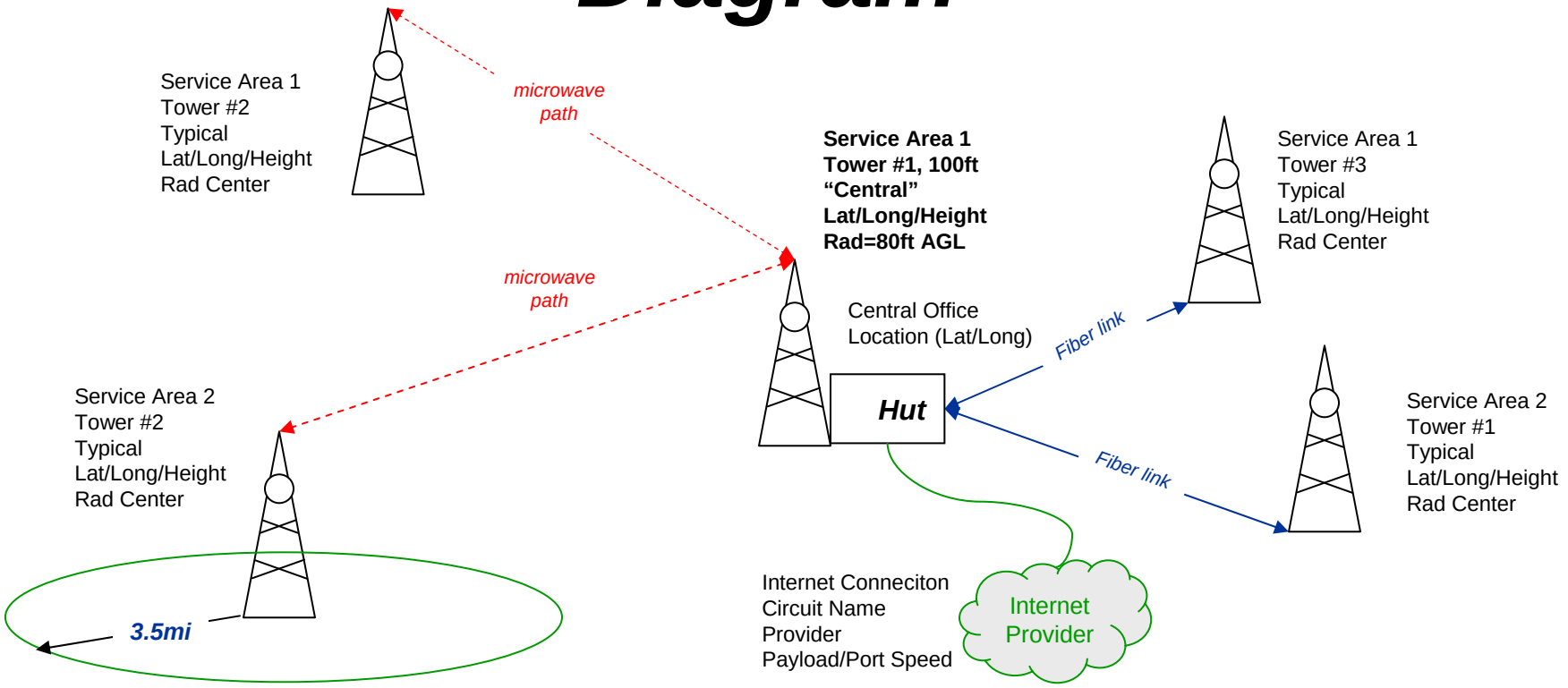
This section requires that the applicant provide a block diagram that shows how traffic flows through the proposed network. It should include:

- The location of major network elements and some of the assumptions used in designing the access portion of the system.
- A description of the connections between major elements in the proposed system including type, capacity, distance, and whether the connection will be owned by the applicant or leased from a provider
- A description of interconnections with other service providers (ISPs, video content provider, voice providers) including location and provider name where known.

The Network Diagram must be particular to your network. Product literature and other general items are not satisfactory.

An example Network Diagram is shown on the next page.

Sample Network Diagram



Site Name	Last Mile Coverage Radius (mi)	Number of Last Mile Sectors	Last Mile Frequency (MHz)	Last Mile ACM?	Last mile Bandwidth (MHz)	Backhaul - Leased (provider) or Owned	Backhaul Type	Backhaul Payload (Mbps)	Backhaul Link Distance	Backhaul Frequency (MHz)	Backhaul Bandwidth (MHz)
4X Typical	3.5mi	3	2300MHz	No	5MHz	Leased Fiber	Fiber (existing)	20Mbps	30mi	n/a	n/a
"Central"	5.5mi	3	3650MHz	Yes	10MHz	Owned	Microwave	27Mbps	15mi	5800MHz	20MHz

Detailed Budget Worksheet

The Detailed Budget Worksheet shows the project broken down into budget category and by unit.

- Should provide enough detail so that the reviewer can clearly tie back to the System Design and Network Diagram and determine if the costs are reasonable given the plan.
- The costs have to be sufficiently detailed as to allow the reviewer to determine their reasonableness.
- Units should be clearly explained where necessary. If you have included several items in one unit, provide a breakdown at the end of the budget or as a supplemental attachment.

Service Level Objectives

The Service Level Objectives section requires that the applicant identify the methods they will use to ensure adequate service quality to consumers within the proposed network. Applicants should identify their approach to and any requirements (bandwidth expense, work force, etc.) that result from these requirements relating to:

- **Capacity Planning**
  - **Methodology and models used to determine**
- **Customer Service**
  - **Ability to react to customer issues**
  - **Telephone support**
  - **NOC operations**
- **Order Fulfillment**
  - **Order provisioning**
  - **Timeframes/New installation turnaround**
  - **Reconnect and disconnect policies**
- **Network Management**
  - **Fault detection**
  - **Fault isolation**
  - **Congestion mitigation**
  - **Escalation procedures**

Licenses and Agreements

Provide any agreement you have in hand (preliminary, contingent, etc., included) that will govern your ability to operate the system. Examples include:

- Video Franchise Agreements
- Interconnection Agreements with Internet, voice, or video providers.
- Contracts with vendors/contractors who will have a role in building out the system.
- Tower leases
- Spectrum Lease Agreements

For any agreement, make sure you provide terms of the agreement as they relate to:

- Expenses
- Capacities
- Specific terms of service

For Spectrum, if the license is held by a parent organization or any third party a copy of the lease between that party and the applicant must be provided.

Environmental Questionnaire

In Round 2, there is no longer a two step process where the Environmental Questionnaire is provided after the initial application. **Everyone must include the Environmental Questionnaire with their application if they are to receive consideration under the BIP program.**

Applicant Environmental Responsibilities:

- Gather required information in accordance with the Environmental Questionnaire
- Conduct any necessary studies or prepare documentation as determined necessary by the federal agency
- Provide and submit follow-on information
- Do not start construction until authorized by RUS- this includes interim construction.

All applicants must complete an Environmental Questionnaire comprised of:

- Ten questions requesting basic environmental information (most information available on web)
- Describe **all** project-related construction activities
- Provide **maps**; clearly delineate all project construction activities on maps

BIP Environmental: Post Award

Post-award environmental responsibilities:

- If necessary RUS will provide specific directions in award documents to applicants
- National Historic Preservation Act, Section 106 activities
  - Cabling
  - Tower construction – use Federal Communication Commission's Tower Construction Notification System
- Endangered Species Act, Section 7 consultations with U.S. Fish and Wildlife Service
- RUS responsible for all determinations/findings

Questions?

Please direct all questions not answered during this presentation to the Broadband USA Help Desk:

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